

WORLD'S COLUMBIAN EXPOSITION,
CHICAGO, ILLS., 1892-'93.

WAR DEPARTMENT EXHIBIT.
MEDICAL DEPARTMENT UNITED STATES ARMY.

No. 6.

DESCRIPTION
OF
SELECTED SPECIMENS

FROM THE
ARMY MEDICAL MUSEUM, WASHINGTON, D. C.

BY
SURGEON JOHN S. BILLINGS, U. S. ARMY,
CURATOR OF MUSEUM.



By DIRECTION OF THE SURGEON-GENERAL.

LOUIS A. LA GARDE,
ASSISTANT SURGEON U. S. ARMY, IN CHARGE OF MEDICAL SECTION.

CHICAGO, ILLS.
1892-'93.

WORLD'S COLUMBIAN EXPOSITION,
CHICAGO, ILLS., 1892-'93.

WAR DEPARTMENT EXHIBIT.
MEDICAL DEPARTMENT UNITED STATES ARMY.

No. 6.

DESCRIPTION
OF
SELECTED SPECIMENS
FROM THE
ARMY MEDICAL MUSEUM, WASHINGTON, D. C.

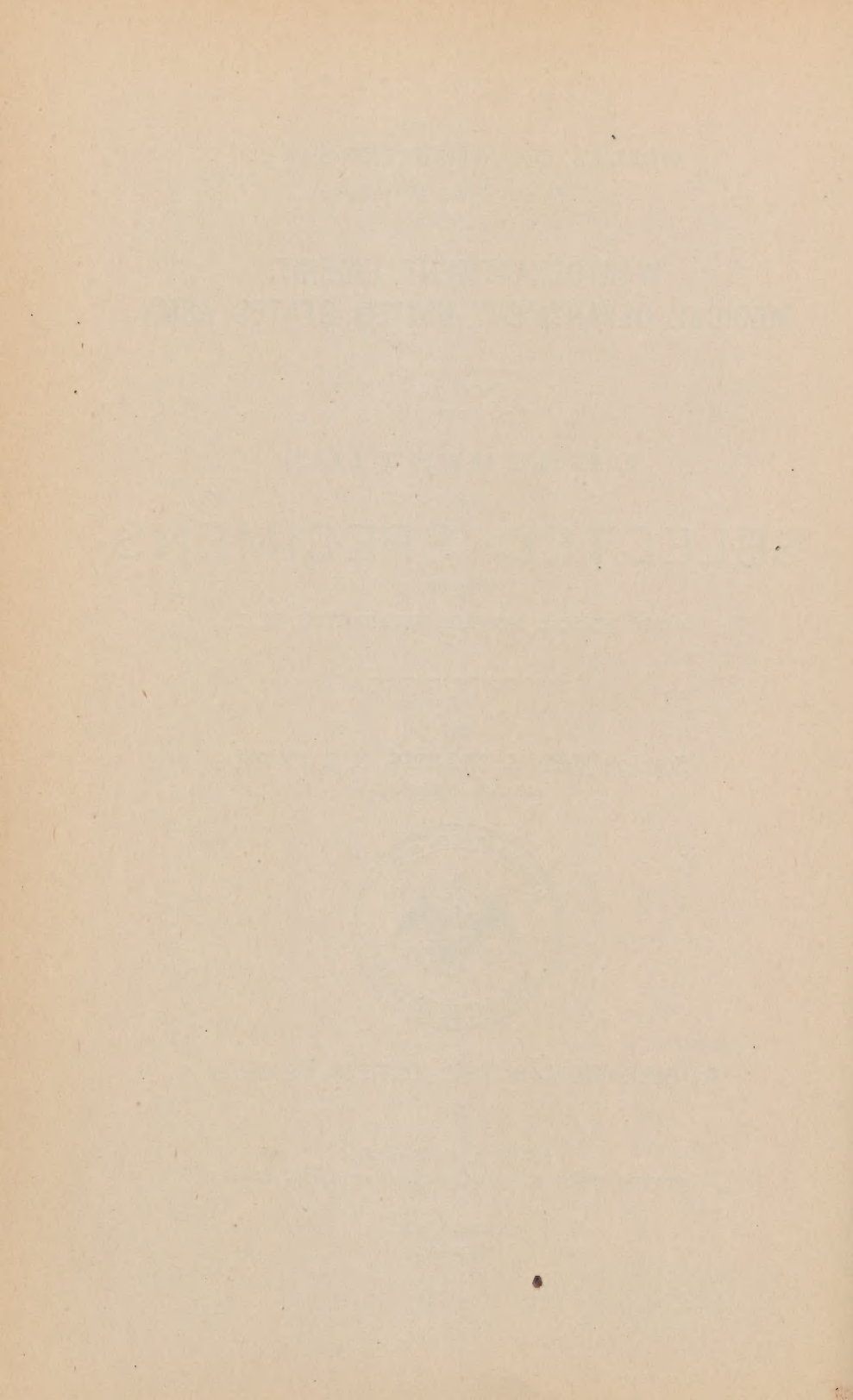
BY
SURGEON JOHN S. BILLINGS, U. S. ARMY,
CURATOR OF MUSEUM.



BY DIRECTION OF THE SURGEON-GENERAL.

LOUIS A. LA GARDE,
ASSISTANT SURGEON U. S. ARMY, IN CHARGE OF MEDICAL SECTION.

CHICAGO, ILLS.
1892-'93.



WORLD'S COLUMBIAN EXPOSITION

CHICAGO, ILLS., 1892-'93.

Description of Selected Specimens

FROM

THE MEDICAL AND SURGICAL SECTIONS

OF THE

ARMY MEDICAL MUSEUM

AT WASHINGTON, D. C.

The exhibition from the Army Medical Museum includes specimens illustrating normal and pathological human anatomy, comparative osteology and histology; also means of transportation of sick and wounded by land and water, plans and models of hospitals, surgical instruments and appliances, anthropometrical instruments, microscopes, culture apparatus, and surgical photographs.

The primary object of the Army Medical Museum was the collection and preservation of specimens illustrative of wounds and of the diseases of armies, as an important step in the study of the best means of diminishing disease and mortality among soldiers, and of rendering them as effective as possible. It was soon found necessary to extend the scope of the collection to include all forms of injuries and diseases, and also to obtain typical specimens of normal human and of comparative anatomy. An effort has also been made to form a collection of surgical instruments, of apparatus connected with the transportation of sick and wounded, and of instruments for diagnosis and for physiological research, including microscopes and culture apparatus. At the present time the Museum contains 3,439 specimens in the section of normal anatomy, 1,717 in that of comparative anatomy, 10,476 specimens in the pathological section, 12,270 specimens in the microscopical section, and 1,584 specimens in the miscellaneous section, devoted to apparatus, instruments, etc., forming a total of 29,486 specimens, illustrative of all branches of medical and surgical science. Large as these numbers may appear, there yet remain many gaps in each series, which

should be filled as rapidly as possible. The appropriations annually made by Congress for the support of the Museum are but little more than sufficient for the current running expenses of the establishment, leaving only a small margin for the acquisition of additional specimens, and the Surgeon-General therefore appeals to all medical men to aid, by contribution of specimens, an institution which is already of great value and interest, having an enviable reputation both in Europe and this country, and which, it is believed, is destined to be of great importance in the advancement of medical science. In recent years, through the co-operation of the officers of the medical staff and of the many practitioners in civil life, many interesting pathological specimens have been obtained; and it is gratifying to be able to state that the number of contributors is steadily increasing, as the facilities afforded by the Museum for the permanent preservation of pathological specimens, and of the records connected with them, are more and more appreciated. Practitioners—who have not the time or facilities for making of minute dissections or preparations of morbid conditions—are usually willing to forward to the Museum the results of their operations or autopsies, feeling sure that such specimens will be carefully examined, and, if of value, properly prepared and preserved, so that they may be available for study by any physician who chooses to visit the Museum for that purpose. It is only necessary that contributors should properly pack the material for transportation by express, placing them in hermetically sealed cans, with alcohol when necessary, or, in case of many specimens, packing them in sawdust or salt. Freight charges are defrayed by the Museum; and those specimens which are found to be of value are mounted permanently, and all data respecting them are placed on record.

In cases of special interest the Museum will return to its contributors photographs of the specimens after they have been properly prepared. Among the specimens which are more particularly desired at present, in order to complete the pathological series of the Museum, may be named:

1. Specimens illustrating the ultimate result of wounds and operations, especially if connected with the late war—such as fractures, resections, amputation stumps, etc.
2. Aneurisms; embolisms; diseases of arteries and veins, of bursæ, or of synovial sheaths; diseases of the bones or joints; hernia.
3. Hypertrophy localized; tumors of all kinds.
4. Effects of osteo-malacia, rickets, syphilis.
5. Diseases of the ear, eye, pancreas, skin (including tattooing), and supra-renal capsules.

6. Sclerosis or atrophy of brain and spinal cord.
7. Acute yellow atrophy of liver.
8. Contracted gouty form of liver.
9. Calculi; foreign bodies in situ.
10. Parasites, except lumbricoids and headless tapeworms.
11. Diseases and results of old injuries in animals.
12. Casts, drawings, and photographs.
13. Specimens illustrating the pathological anatomy of scurvy, cerebro-spinal meningitis, cholera, leprosy, yellow fever.
14. Abnormities and deformities of all kinds; monsters.
15. Atrophy of old age.
16. Specimens of skeletons, as complete as possible, of very old men or women, especially if the ages are known; also of bones of very old animals.

JOHN S. BILLINGS,

Surgeon U. S. Army, Curator Army Medical Museum.

SPECIMENS FROM CASES OF TUBERCULOSIS.

10211. Cheesy tubercle in lung of adult. Contributed by Dr. J. S. Ely, New York.

TUBERCLE OF LYMPHATIC GLANDS.

26, P. P. Mesenteric glands of a child; cheesy tubercle. Contributed by Dr. G. L. Magruder, Washington, D. C.

5, P. P. Spleen; cheesy tubercle. Contributed by Dr. S. S. Bond, Washington, D. C.

TUBERCLE OF DIGESTIVE ORGANS.

8224. Tubercular ulcers of ileum and tubercle on peritoneum; adult. Contributed by Dr. S. S. Bond, Washington, D. C.

2714, P. P. Tubercle of greater omentum of cow. Contributed by Surgeon W. H. Forwood, U. S. Army.

TUBERCLE OF GENITO-URINARY ORGANS.

10223. Tubercular cavities in kidney and cheesy deposits in ureter; adult. Contributed by Dr. T. B. Hood, Washington, D. C.

2549, P. P. Tubercle of testicle; adult.

TUBERCLE OF BONE.

8021. Tubercular caries of vertebræ. Contributed by Dr. N. S. Lincoln, Washington, D. C.

SPECIMENS FROM TYPHOID FEVER CASES.

THE FIRST STAGE OF THE FEVER.

8831. Peyer's patches and solitary follicles of small intestine enlarged. The solitary follicles of colon were also enlarged. From an ambulant case in a child. Not recognized during life. Contributed by Dr. W. W. Johnston, Washington, D. C.

SECOND STAGE—ULCERATION.

8923. So-called "typho-malarial fever." Solitary follicles of ileum much enlarged; Peyer's patches thickened and ulcerated. Solitary follicles of colon were also ulcerated. From a soldier. Contributed by Assistant Surgeon W. E. Waters, U. S. Army.

8265. Peyer's patches thickened and ulcerated; the solitary follicles of colon showed a like condition. From a soldier. Contributed by Assistant Surgeon William Thomson, U. S. Army.

8868. So-called "Mountain fever." Peyer's patches deeply ulcerated and one has perforated, causing peritonitis. The solitary follicles of ileum and colon were but slightly affected. From a soldier. Contributed by Assistant Surgeon J. V. R. Hoff, U. S. Army.

8906. Peyer's patches ulcerated and two have perforated, causing peritonitis. From a soldier. Contributed by Surgeon W. H. Forwood, U. S. Army.

THIRD STAGE—HEALING.

8045. There is ulcerative erosion of the entire mucous membrane with diphtheritic patches; one large oval healing ulcer of a Peyer's patch. There was follicular ulceration and false membrane in colon. (Probably diphtheritic dysentery supervening upon convalescence from typhoid fever.) Contributed by Acting Assistant Surgeon W. C. Miner, U. S. Army.

7828. The mesenteric glands affected. A mass of enlarged mesenteric glands. From a case of "camp fever" in a soldier. Contributed by Assistant Surgeon William Thomson, U. S. Army.

TUMORS.

Series of Connective Tissue Tumors.

FIBROMA.

10192. Fibroma of skin of leg, etc. Contributed by Dr. N. S. Lincoln, Washington, D. C.

MYXOMA.

10359. Myxoma of clitoris. Contributed by Dr. N. F. Graham, Washington, D. C.

LIPOMA.

2327, P. P. Lipoma of scalp. Contributed by Assistant Surgeon P. F. Harvey, U. S. Army.

CHONDROMATA.

40, P. P. Chondroma of shoulder. Contributed by Dr. J. B. S. Jackson, Boston, Mass.

10171. Osteochondroma of thigh. Plaster cast. Contributed by Dr. C. G. Stone, Washington, D. C.

2857, P. P. Portion of osteochondroma of thigh, from case which furnished preceding plaster cast. Contributed by Dr. C. G. Stone, Washington, D. C.

OSTEOMA.

1913, P. P. Osteoma of dura mater. Contributed by Acting Assistant Surgeon D. S. Lamb, U. S. Army.

ANGIOMATA.

10243 and 10244. Cavernous angioma of spleen (very rare) and liver. Contributed by Dr. T. C. Smith, Washington, D. C.

MYOMATA (LEIOMYOMATA).

10344. Myoma of uterus. Contributed by Dr. J. J. Sumner, Washington, D. C.

2766, P. P. Myoma of uterus; calcified; dry. Contributed by Dr. J. Taber Johnson, Washington, D. C.

2464, P. P. Myoma of prostrate gland (so-called hypertrophy). Contributed by Acting Assistant Surgeon D. S. Lamb, U. S. Army.

LYMPHADENOMA.

2018, P. P. Lymphadenoma of lumbar glands. Contributed by Dr. S. T. Armstrong, Passed Assistant Surgeon, U. S. Marine Hospital Service.

SARCOMATA.

2739, P. P. Round-celled sarcoma of pancreas. Contributed by Medical Inspector H. M. Wells, U. S. Navy.

1865, P. P. Round-celled sarcoma of kidney. Contributed by Dr. C. A. Norton, Washington, D. C.

EPITHELIOMATA.

2389, P. P. Squamous epithelioma of finger.

2501, P. P. Squamous epithelioma of bladder. Contributed by Surgeon C. C. Byrne, U. S. Army.

10195. Cylindrical epithelioma of uterus. Contributed by Dr. G. C. Freeborn, New York.

CARCINOMATA.

1712, P. P. Cancer of female breast. Contributed by Dr. G. S. Palmer, Washington, D. C.

10328. Cancer of spleen. Contributed by Acting Assistant Surgeon D. S. Lamb, U. S. Army.

2513, P. P. Cancer of tongue. Contributed by Dr. J. A. White, Richmond, Va.

2768, P. P. Cancer of mesentery. Contributed by Surgeon W. H. Forwood, U. S. Army.

10361. Cancer of kidney, etc. Contributed by Dr. A. A. Snyder, Washington, D. C.

2637, P. P. Cancer of femur. Contributed by Dr. Thomas McArdle, Washington, D. C.

CYSTOMATA.

1614, P. P. Cystomata of chorion villi (hydatidiform mole). Contributed by Dr. P. J. Murphy, Washington, D. C.

2769, P. P. Cyst of kidney; congenital. Contributed by Surgeon W. H. Forwood, U. S. Army.

UNCLASSIFIED.

2622, P. P. Goitre; from a human adult. Contributed by Acting Assistant Surgeon D. S. Lamb, U. S. Army.

ILLUSTRATIONS OF INJURIES OF BONES.

5695. The larger part of the bones of the vault and base of the skull, showing nine shot fractures of the tabular bones, evidently made after death by a pistol or carbine bullet. From a Sioux Indian; Wyoming Territory, April, 1870. Contributed by Surgeon C. H. Alden, U. S. Army.

2032. Skull of a child 12 years old, who was killed at the Mountain Meadow massacre in 1857. The bullet from a hunting rifle entered the left parietal and passed out of the right side of the frontal bone. Contributed by Surgeon B. A. Clements, U. S. Army.

1108. Anterior part of skull, showing a rifle-bullet lodged in the left orbital plate and ethmoid bone; it entered through the right orbit. From a soldier who lived two months after the injury. Contributed by Acting Assistant Surgeon C. H. Dare, U. S. Army.

2000. Part of vault of skull, showing five buttons of bone removed by trephining from the right fronto-parietal region, on account of convulsions. From a soldier. Contributed by Surgeon D. P. Smith, U. S. Vols.

10042. Vault of skull, showing a large depressed healed fracture of frontal bone, right side, and a recent fissure of right fronto-parietal region. From an army teamster who had two severe falls, with ten years' interval, from the second of which he died. Contributed by Assistant Surgeon Edward Everts, U. S. Army.

6677. Portion of vault of skull of a Sioux Indian, showing a hoop-iron arrow-head embedded in right parietal bone. Found at Camp Lewis, Montana. Contributed by Mr. John R. Drew.

6900. A thin skull, showing multiple fractures and depression of left parietal and frontal bones. From an old colored man who was "butted" by another negro, and died twelve days afterwards. There are about a dozen fragments. Contributed by Dr. J. F. Hartigan, Washington, D. C.

3739. Three lumbar vertebræ, showing an iron grapeshot which penetrated posteriorly and lodged in the spinal canal. From a soldier who died four days after injury. Contributed by Surgeon Samuel Kneeland, U. S. Vols.

3583. Two lumbar vertebræ, showing a rifle-bullet attached to the front of the upper one. It had entered posteriorly and lodged in the abdomen. From a soldier who lived four days after injury. Contributed by Assistant Surgeon William Thomson, U. S. Army.

7304. The last three lumbar vertebræ, showing rifle-bullet lodged in spinal canal: it had penetrated posteriorly and injured the bodies of the vertebræ which have become ankylosed together. From a soldier who died eighteen years after injury. He had paralysis of left lower limb. Contributed by Dr. J. O. Stanton, Washington, D. C.

934. Left innominate bone and upper end of femur ; the innominate shows fracture and new growth of bone and a perforation at bottom of acetabulum, the latter the result of inflammation. From a soldier who lived over three months after injury. Contributed by Assistant Surgeon Wm. M. Notson, U. S. Army.

1234. Right humerus amputated at shoulder-joint for pistol-shot fracture in upper half. From a Confederate soldier. Amputation two days after injury. Recovery. Contributed by Acting Assistant Surgeon B. P. Brown, U. S. Army.

2042. Right humerus, showing shot fracture in upper half. From a soldier. Amputated the day after injury. Recovery. Contributed by Surgeon J. Dwinelle, 106th Pennsylvania Vols.

1559. Lower two-thirds of right humerus struck at short range by rifle-bullet, fracturing centre of shaft.

1688. Part of upper end of left humerus, showing necrosis with involucrum and cloacæ. From a soldier. Excision one year after injury. Contributed by Surgeon D. W. Bliss, U. S. Vols.

4195. Portion of stump of right humerus nearly seven months after amputation in lower third ; involucrum and sequestrum. From a soldier. Amputated four days after injury. Contributed by Acting Assistant Surgeon James Tyson, U. S. Army.

2749. Right humerus, etc., $15\frac{1}{2}$ months after shot fracture ; inflammation and ankylosis ; abundance of new bone ; large sequestrum. From a soldier who died of Bright's disease $15\frac{1}{2}$ months after injury. Contributed by Acting Assistant Surgeon C. H. Boardman, U. S. Army.

3209. Parts of bones of right arm ; sequestrum and involucrum of humerus ; lower end of humerus excised : ankylosis of radius and ulna. From a soldier ; excision the day after injury ; amputation four months afterwards. Recovery. Contributed by Assistant Surgeon Philip C. Davis, U. S. Army.

2038. Bones of right forearm fractured in upper third. From a soldier. Amputation two days after injury. Recovery. Contributed by Surgeon J. Dwinelle, 106th Pennsylvania.

320. Bones of left forearm fractured in the middle. Contributed by Surgeon J. E. Summers, U. S. Army.

3093. Right elbow-joint and portion of bones of forearm showing shot fracture. From a soldier. Amputation the day after injury. Death from exhaustion one month later. Contributed by Surgeon William Watson, 105th Pennsylvania.

4227. Bones of right hip-joint; head of femur shattered by a rifle-bullet which is *in situ*. Some new bone thrown out by the inflammation. From a soldier who lived nearly three months after injury. Contributed by Acting Assistant Surgeon H. Richings, U. S. Army.

1470. Lower half of left femur, showing fracture by rifle-bullet; the bullet attached. Contributed by Surgeon J. Y. Cantwell and Assistant Surgeon A. D. Kibbee, 82d Ohio Vols.

1413. Lower two-thirds of right femur showing shot fracture; primary amputation; flattened rifle-bullet attached. Contributed by Surgeon C. S. Wood, 66th New York Vols.

4120. Lower part of right femur, showing shot fracture; flattened bullet attached. From a soldier; amputation on field; recovered. Contributed by Surgeon D. S. Hays, 110th Pennsylvania Vols.

1099. Upper half of left femur, showing sequestrum and involucrum. From a soldier. Amputation three weeks after fracture; death two months later. Contributed by Surgeon H. S. Hewitt, U. S. Vols.

1509. Lower third of left femur, showing fracture by a fragment of shell weighing 13 oz. The fragment is shown.

108. Sequestrum from stump of right femur. From a soldier who had a shot fracture of knee. Primary amputation. Removal of sequestrum $7\frac{1}{2}$ months afterwards. Contributed by Acting Assistant Surgeon B. B. Miles, U. S. Army.

5275. Right femur of an adult, showing marked anterior posterior curvature. From the Gibson collection.

5422. Left femur, the upper half nearly destroyed by scrofulous degeneration. From the Gibson collection.

2272. Bones of right knee-joint; femur and tibia badly fractured by rifle-bullet, which is attached; upper end of femoral fragment appears to have been fractured by a shell. From a soldier. Amputation one week after injury. Death three weeks later. Contributed by Surgeon D. W. Bliss, U. S. Vols.

1243. Portion of right femur and tibia, showing fracture by round bullet, which is attached. From a soldier. Amputation 11 days after injury; secondary hæmorrhage. Death from septicæmia three weeks later. Contributed by Assistant Surgeon William Thomson, U. S. Army.

3870. Lower half of left femur, showing shot fracture and callus, but no union. From a soldier. Union had taken place; bone accidentally refractured. Death from exhaustion. Contributed by Assistant Surgeon R. F. Weir, U. S. Army.

5365. Bones of left knee-joint showing ankylosis. From the Gibson collection.

4121. Upper end of left tibia, showing shot fracture by the base of a shell, which is attached. From a soldier. Amputation the day after injury. Death from exhaustion twenty-five days afterwards. Contributed by Surgeon J. S. Jamison, 86th New York.

490. Portion of bones of left leg, showing shot fracture. Primary amputation in middle third. Bullet attached. No history. Contributed by Assistant Surgeon G. M. McGill, U. S. Army.

4497. Lower half of bones of right leg, showing shot fracture; amputation in middle third next day after injury. From a soldier. Recovery. Contributed by Assistant Surgeon A. B. Haines, 20th Indiana.

4387. Bones of right leg six months after shot fracture in lower third; fragments of fibula united; foliaceous new bone on tibia. From a soldier. Amputation many months afterwards. Contributed by Surgeon Edwin Bentley, U. S. Vols.

3607. Bones of right ankle $13\frac{1}{2}$ months after shot fracture; profuse new formation of bone; large carious sinus. From a soldier. Amputation $13\frac{1}{2}$ months after injury. Recovery. Contributed by Assistant Surgeon G. M. Sternberg, U. S. Army.

3096. Portion of tibia six months after removal of carious bone for scrofulous disease, showing hypertrophy and abscess cavity. From a colored girl aged 12 years, who died of tuberculosis. Contributed by Surgeon Robert Reyburn, U. S. Vols.

ILLUSTRATIONS OF DISTORTED SMALL PROJECTILES.

464. An oval, flattened fragment of lead, as if a longitudinal section of a conoidal ball, taken from the anterior surface of the middle third of the right thigh, having passed directly through the limb. Contributed by Surgeon Samuel Brilliantowski, 41st N. Y.

573. A conoidal ball, split longitudinally into two nearly equal parts from the apex to the base and pressed open so the two surfaces are in the same plane. The weight of the missile is 1 oz. 3 drams and 24 grains, and its greatest length two inches. It had passed through one man at Gettysburg and inflicted a deep flesh wound in the thigh of another, from whom it was extracted. Contributed by Acting Assistant Surgeon B. B. Miles, U. S. Army.

693. A conoidal ball, flattened from the apex backward, with the body curved over the base to a diameter of nearly an inch and one-

fourth, which entered the front of the knee below the patella while the joint was flexed, passed upward and inward through the inner condyle and was removed from below the integument. Contributed by Surgeon I. Moses, U. S. Vols.

1236. A conoidal ball, apparently split longitudinally and laterally expanded and flattened. The missile evidently struck in the act of longitudinal rotation. Entered three inches above the patella and extracted behind the trochanter major of the right femur. Contributed by Surgeon E. D. Kittoe, U. S. Vols.

2353. A conoidal ball which has struck base first, the cupped portion being flattened over a diameter of nearly one and a third inches. Contributed by Acting Assistant Surgeon S. B. Hoppin, U. S. Army.

2706. A conoidal ball, with the apex compressed down upon the body, which is forced out laterally and has received a deep groove across the upper surface. Contributed by Surgeon D. P. Smith, U. S. Vols.

3121. An elongated smooth-bore ball, with the anterior portion obliquely flattened, the extremity curled over and the cup somewhat expanded. Contributed by Assistant Surgeon H. Allen, U. S. Army.

4279. A conoidal ball, smoothly split from the apex to the second ring, with the two halves turned backward. Contributed by Assistant Surgeon J. Sim Smith, U. S. Army.

4398. A conoidal ball, with one lateral half of the body smoothed into the concavity of a segment of a large circle. Contributed by Acting Assistant Surgeon W. W. Keen, U. S. Army.

4423. A conoidal ball, smoothly flattened over a surface of one by one and a half inches by contact with the femur, not producing fracture. The flattening is lateral, as if by being rolled out after splitting. Contributed by Acting Assistant Surgeon W. W. Keen, U. S. Army.

4464. A conoidal ball, blunted at the apex, with the base partly split open, compressed and expanded. Contributed by Surgeon J. E. Summers, U. S. Army.

4490. An elongated rifle-ball, whose length has been slightly increased by compression, and which is covered with shallow parallel grooves. There is a loss of one-half square inch of its body in the upper part, showing a cavity, a not infrequent defect in cast bullets, due to the unequal cooling. Contributed by Surgeon A. Hard, 8th Illinois cavalry.

4508. A conoidal ball, laterally and irregularly compressed on both sides for its entire length, which entered the capsule of the left humerus, involved the acromio-clavicular articulation, comminuted the spine of the scapula and lodged near the inferior angle. Contributed by Assistant Surgeon W. A. Conover, U. S. Vols.

4537. A conoidal ball, with nearly one-third of the body smoothly and obliquely split off from the apex and turned back and joined at the base, forming a plane surface with ragged edges. Contributed by Assistant Surgeon P. Adolphus, U. S. Army.

4561. A conoidal bullet, considered to be a specimen of the explosive ball. About the middle of the body the missile has been divided, and the broken fragment is thrown forward, being attached at the apex. Contributed by Assistant Surgeon J. T. Calhoun, U. S. Army.

4562. A conoidal ball, flattened upon itself in the middle of its body, with an oblique flattening at one border. The missile is very heavy. The special feature of the specimen is that it was so distorted against the inferior maxilla without fracture of that bone. Contributed by Hospital Steward Charles Gibbs, U. S. Army.

4610. A conoidal ball, with a copper spade-shaped attachment, twice its own length, fastened within the cup and designed to render the flight more accurate. Believed to be of a pattern rejected by the Ordnance Department about 1860. Contributed by Corporal S. Willis, 1st V. R. C.

4715. A conoidal ball, beaten into an irregular oblong, extracted from the right temple seventy-nine days after lodgment. Contributed by Surgeon John A. Lidell, U. S. Vols.

5046. Ball flattened and distorted removed from among fragments of femur. Contributed by Surgeon I. Moses, U. S. Vols.

5947. A musket-ball which impinged upon the femur and was extracted eight years after injury. Contributed by Dr. A. W. Nelson, New London, Conn.

